Chain Store Age EXECUTIVE

with Shopping Center Age

The newsmagazine for retail management

October 1990 ISSUED IN THREE SECTIONS SECOND CLASS

Double Convention Issue

RISCON, SCAN-TECH

SEARS WINS RETAIL INNOVATION TECHNOLOGY AWARD

"We're customizing assortments right down to the specific store."

Robert J. Fortenhoff, vp-information services

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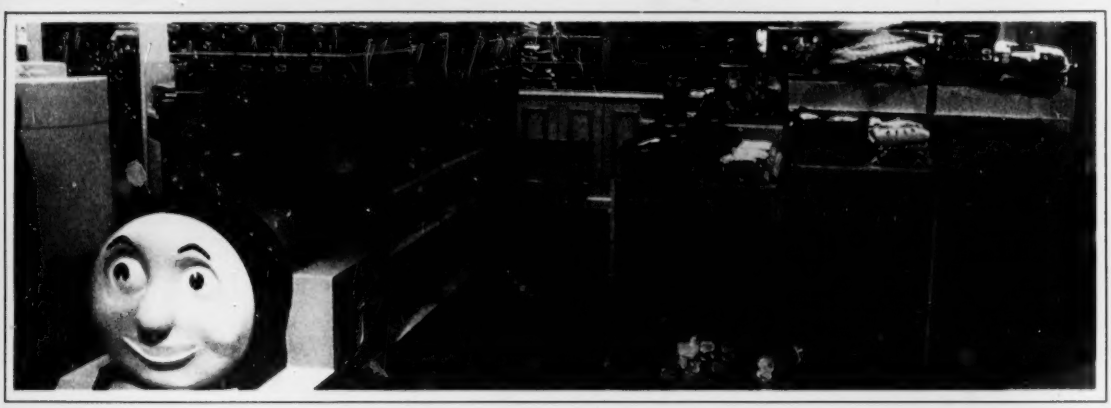

NEW DAYTON'S IS CUSTOMER-FRIENDLY

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"EDWARDS EXCLUSIVES"
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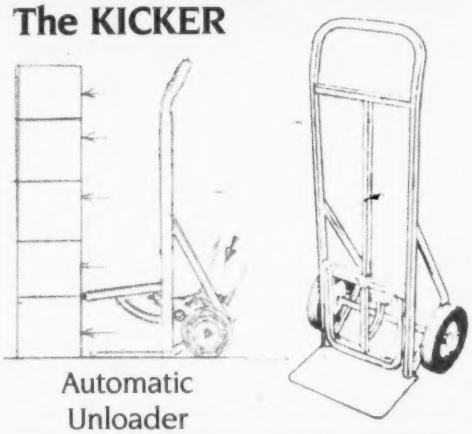
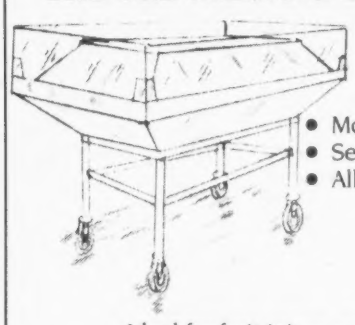
The KICKER



Automatic
Unloader

The ICE MERCHANDISER



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produce, seafoods, etc.

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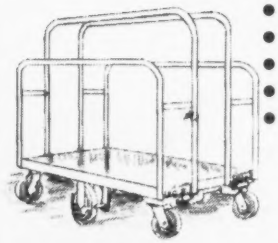

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SALES

	2nd qtr. (000 omitted)	% change	YTD (000 omitted)	% change
CATALOG STORE CHAINS				
J. C. Penney*	3,580,000	+ 4.1	7,110,000	+ 4.9
Sears, Roebuck & Co.	7,133,800	+ 1.6	13,232,700	+ 1.0
DEPARTMENT STORE CHAINS				
Dillard	774,564	+ 23.1	1,516,946	+ 23.6
Gottschalks	63,717	+ 28.2	118,809	+ 25.3
Jacobson's	88,285	+ 2.8	178,227	+ 3.5
May†	2,198,000	+ 8.8	4,379,000	+ 9.8
Mercantile*	515,345	+ 2.0	1,009,406	+ 2.6
Nordstrom	801,770	+ 10.0	1,356,808	+ 9.3
Strawbridge & Clothier*	215,679	+ 6.7	424,926	+ 8.2
DISCOUNT STORES				
Best Products[1]	407,859	+ 4.2	407,859	+ 4.2
Consolidated	159,063	+ 19.6	299,083	+ 13.0
Dayton Hudson*	3,242,000	+ 4.7	6,249,000	+ 5.5
Dollar General	153,012	+ 3.7	286,778	+ 3.3
Family Dollar[3]	217,457	+ 15.9	651,667	+ 17.4
Hills	457,976	+ 6.3	910,776	+ 9.9
Jamesway	216,603	+ 7.7	403,722	+ 11.2
K mart	7,877,300	+ 11.1	14,980,400	+ 13.3
Rose's	352,116	+ 1.4	705,427	+ 4.5
Service Merchandise	749,227	+ 4.5	1,374,674	+ 7.2
Venture	NR	NR	603,000	+ 6.7
Wal-Mart	7,604,906	+ 24.9	14,424,133	+ 25.5
SHOE/SPECIALTY CHAINS				
Brown Group†	435,713	+ 1.8	874,376	+ 1.1
Edison Bros.	273,000	+ 19.6	521,000	+ 17.6
Genesco*	117,122	– 2.0	227,091	+ 1.1
Melville	1,949,195	+ 16.4	3,567,034	+ 11.3
U.S. Shoe	671,442	+ 15.1	1,338,177	+ 16.1
Woolworth	2,191,000	+ 10.5	4,256,000	+ 10.3
APPAREL CHAINS				
Charming Shoppes	218,971	+ 8.9	410,730	+ 10.0
Deb Shops	48,085	+ 2.0	90,631	+ 2.2
Designs	25,107	+ 66.5	44,674	+ 64.0
Frederick's of Hollywood[3]	24,230	+ 20.6	74,506	+ 22.5
Gantos	61,118	+ 15.7	122,289	+ 17.7
The Gap	405,000	+ 24.2	807,000	+ 26.9
Paul Harris	55,230	+ 0.9	104,557	+ 2.8
The Limited	1,154,562	+ 16.6	2,261,907	+ 15.7
Merry-Go-Round	124,873	+ 38.3	245,840	+ 49.7
Petrie	313,010	+ 6.6	614,469	+ 7.3
Wet Seal	27,721	+ 53.5	48,509	+ 53.1
OFF-PRICE APPAREL				
Clothestime	56,975	+ 9.5	103,804	+ 11.3
One Price Clothing	34,092	+ 39.6	55,853	+ 42.7
Ross*	193,177	+ 10.0	364,253	+ 10.1
S&K	15,205	+ 14.5	30,240	+ 17.6
Syms	80,974	+ 4.6	146,304	+ 6.1
TJX†*	572,480	+ 14.4	1,086,237	+ 12.4
50-Off Stores*	15,223	+ 27.9	30,729	+ 24.6
WAREHOUSE WHOLESALE CLUBS				
Bizmart[1]	48,345	+ 145.6	48,345	+ 145.6
Costco[3]*	947,946	+ 44.0	2,760,368	+ 42.7
HQ Office Supp. Warehouse	17,531	+ 198.7	40,519	+ 431.8
Office Club	63,686	+ 105.2	127,663	+ 114.9
Office Depot*	136,769	+ 114.3	279,396	+ 119.4
Price[4]	1,202,518	+ 8.5	4,182,411	+ 10.9
Waban	622,959	+ 18.3	1,169,083	+ 18.6
Warehouse Club[3]	66,311	– 2.5	200,179	– 2.3
Wholesale Club	177,000	+ 31.1	329,570	+ 36.2

EARNINGS

	2nd qtr. (000 omitted)	% change	YTD (000 omitted)	% change
CATALOG STORE CHAINS				
J. C. Penney*	83,000	– 15.3	237,000	– 3.7
Sears	25,100	– 72.8	(109,100)	NA
DEPARTMENT STORES				
Dillard	28,722	+ 53.2	58,122	+ 51.6
Gottschalks	79	NA	335	NA
Jacobson's	(2,856)	NA	(1,725)	NA
May†	78,200	+ 10.1	157,900	+ 17.3
Mercantile*	15,271	– 7.7	41,072	– 5.7
Nordstrom	35,924	– 6.8	49,093	– 20.2
Strawbridge & Clothier*	(475)	NA	589	– 89.2
DISCOUNT STORES				
Best Products[1]	(26,275)	NA	(26,275)	NA
Consolidated	804	+ 3,250.0	(2,917)	NA
Dayton Hudson*	59,000	+ 5.4	117,000	+ 21.9
Dollar General	2,548	– 7.6	2,938	+ 25.8
Family Dollar[3]	7,782	+ 65.0	23,044	+ 28.7
Hills	(15,174)	NA	(32,126)	NA
Jamesway	(871)	NA	(1,868)	NA
K mart	148,000	+ 2.0	248,100	+ 3.7
Rose's	481	NA	2,554	NA
Service Merchandise	1,200	– 91.3	(14,307)	NA
Venture	NR	NR	4,100	+ 30.0
Wal-Mart	272,931	+ 24.6	526,374	+ 26.1
SHOE/SPECIALTY STORES				
Brown Group†	5,209	+ 52.3	13,951	+ 30.0
Edison Bros.	10,800	+ 25.6	18,300	+ 26.2
Genesco*	965	– 82.9	(548)	NA
Melville	78,250	+ 27.0	86,061	+ 0.2
U.S. Shoe	1,855	– 29.0	45,855	+ 62.8
Woolworth	50,000	+ 4.2	88,000	+ 4.8
APPAREL CHAINS				
Charming Shoppes	10,252	– 12.8	17,229	– 7.6
Deb Shops	3,723	– 25.6	4,373	– 25.6
Designs	(381)	NA	(1,402)	NA
Frederick's of Hollywood[3]	731	+ 20.4	3,176	+ 40.2
Gantos	(2,596)	NA	(3,381)	NA
The Gap	19,200	+ 36.2	40,300	+ 38.0
Paul Harris	(203)	NA	(575)	NA
The Limited	79,025	+ 23.9	141,340	+ 29.7
Merry-Go-Round	5,475	+ 253.5	12,089	+ 275.9
Petrie	1,757	– 50.0	9,188	– 12.9
Wet Seal	2,271	+ 91.0	3,391	+ 85.8
OFF-PRICE APPAREL				
Clothestime	1,464	– 37.1	100	– 95.8
One Price Clothing	2,896	+ 59.0	2,759	+ 38.3
Ross*	(1,934)	NA	(2,479)	NA
S&K	471	+ 5.1	959	+ 14.7
Syms	3,991	– 5.7	5,770	– 12.9
TJX†*	14,431	+ 38.8	29,003	+ 21.4
50-Off Stores	174	+ 145.1	747	+ 49.1
WAREHOUSE WHOLESALE CLUBS				
Bizmart[1]	(1,115)	NA	(1,115)	NA
Costco[3]	9,136	+ 134.9	27,280	+ 81.4
HQ Office Supp. Warehouse	(3,953)	NA	(5,149)	NA
Office Club	432	NA	1,141	NA
Office Depot*	1,578	+ 38.4	4,482	+ 67.0
Price[4]	23,285	+ 9.8	93,493	+ 9.2
Waban	6,825	– 22.4	8,240	– 46.2
Warehouse Club[3]	(56)	NA	(721)	NA
Wholesale Club	558	– 32.5	1,345	+ 29.1

NA = not applicable because of loss in either current or comparable period
NC = no change NR = not reported
*before extraordinary items or changes in accounting principles
†continuing operations only
[1]first quarter figures
[2]second quarter figures
[3]third quarter figures
[4]fourth quarter figures
Source: Company reports

SALES

	2nd qtr. (000 omitted)	% change	YTD (000 omitted)	% change
HARD LINES CHAINS				
Best Buy[1]	126,077	+ 20.3	126,077	+ 20.3
Blockbuster Ent.	148,977	+ 67.9	288,127	+ 73.9
Circuit City[1]	493,400	+ 20.9	493,400	+ 20.9
Claire's	55,210	+ 45.3	108,730	+ 50.3
Computer Factory[3]*	83,895	+ 2.3	297,688	+ 6.7
Fabri-Centers	75,857	+ 12.7	155,995	+ 10.3
Good Guys[3]	65,390	+ 56.0	215,234	+ 50.6
House of Fabrics	87,358	+ 7.4	173,777	+ 8.1
Lechters[4]	36,616	+ 19.1	69,783	+ 20.7
Lionel	69,747	+ 3.3	135,616	+ 5.3
Michaels	71,506	+ 24.4	143,179	+ 25.9
Musicland	168,166	+ 29.8	318,088	+ 23.7
Pep Boys	234,270	+ 17.3	447,304	+ 18.3
Pier I Imports[1]	138,430	+ 21.5	138,430	+ 21.5
Tandy[4]	1,043,491	+ 16.3	4,499,604	+ 7.6
Tiffany & Co.	107,274	+ 24.9	200,501	+ 26.0
Toys "R" Us	964,034	+ 24.3	1,908,836	+ 23.7
Trans World Music	72,889	+ 17.2	143,755	+ 12.7
Williams-Sonoma	57,319	+ 30.6	114,004	+ 29.2
SUPERMARKETS				
Albertsons	2,073,849	+ 13.6	4,083,716	+ 12.2
A&P[1]	3,402,690	– 1.1	3,402,690	– 1.1
American	5,581,038	+ 3.8	11,003,536	+ 3.9
Bruno's[4]*	579,805	+ 12.4	2,394,788	+ 12.2
Delchamps[4]	246,701	+ 7.9	948,257	+ 5.4
Eagle Food Centers*	282,527	+ 0.9	564,081	+ 2.0
Food Lion	1,274,167	+ 19.1	2,475,452	+ 19.0
Giant Food	763,999	+ 4.3	1,533,263	+ 5.2
Hannaford Bros.*	418,353	+ 12.1	812,271	+ 12.6
Kroger*	4,742,387	+ 7.2	9,301,146	+ 4.3
Marsh[1]	250,711	+ 13.5	250,711	+ 13.5
Quality Food	77,489	+ 1.2	150,661	+ 11.1
Ralphs Grocery*	622,700	+ 5.9	1,243,600	+ 7.1
Safeway	3,435,100	+ 5.0	6,771,100	+ 4.2
Smith's Food & Drug	501,191	+ 18.8	988,936	+ 20.4
Vons*	1,221,800	+ 2.1	2,433,500	+ 2.3
Weis Markets	318,396	+ 3.1	632,367	+ 3.6
Winn-Dixie[4]	2,300,000	+ 4.5	9,700,000	+ 6.5
CONVENIENCE STORES				
Circle K[4]	907,893	– 2.6	3,736,552	+ 6.9
Dairy Mart*	211,575	+ 7.4	398,313	+ 8.3
National Convenience[4]*	275,666	– 4.0	1,062,183	– 1.4
Southland	2,154,409	– 0.3	4,092,454	+ 0.7
Uni-Marts[3]	61,836	+ 6.7	176,760	+ 13.3
DRUG STORES				
Big B	101,241	+ 13.1	224,139	+ 14.8
Block Drug[1]	118,894	+ 13.0	118,894	+ 13.0
Drug Emporium[1]	141,101	+ 23.8	141,101	+ 23.8
Fay's*	162,344	+ 16.1	315,538	+ 16.5
Genovese*	96,866	+ 6.3	225,444	+ 10.3
Longs	558,687	+ 11.1	1,096,113	+ 10.0
Perry[3]*	159,312	– 2.8	496,823	– 2.1
Revco[4]	558,061	– 36.6	2,489,985	– 7.8
Rite Aid[1]*	830,541	+ 10.1	830,541	+ 10.1
Walgreen[3]	1,521,757	+ 12.7	4,555,163	+ 12.8
HOME CENTERS				
Grossman's	242,832	– 29.4	399,767	– 29.0
Home Depot	990,346	+ 40.7	1,871,202	+ 39.1
Lowe's	818,052	+ 9.6	1,538,960	+ 14.1
Wolohan Lumber	88,268	+ 10.5	141,356	+ 9.7
NON-STORE RETAILERS				
Lands' End	117,088	+ 12.3	229,279	+ 8.0
Lillian Vernon[1]	30,003	+ 1.8	30,003	+ 1.8
Sharper Image	41,163	– 6.6	75,822	+ 4.3
Spiegel	403,737	+ 23.3	793,601	+ 21.6
QVC Network*	158,824	+ 189.2	320,096	+ 198.0

EARNINGS

	2nd qtr. (000 omitted)	% change	YTD (000 omitted)	% change
HARD LINES CHAINS				
Best Buy[1]	(1,222)	NA	(1,222)	NA
Blockbuster Ent.	14,840	+ 84.3	28,289	+ 83.2
Circuit City[1]	12,076	+ 12.5	12,076	+ 12.5
Claire's	3,415	+ 42.7	6,620	+ 54.0
Computer Factory[3]*	(4,333)	NA	(6,428)	NA
Fabri-Centers	(1,158)	NA	(530)	NA
Good Guys[3]	1,289	+ 314.5	6,032	+ 96.9
House of Fabrics	703	NA	2,857	+ 134.1
Lechters[4]	394	+ 93.1	687	+ 93.0
Lionel	(4,703)	NA	(10,685)	NA
Michaels	17	– 92.0	461	– 25.6
Musicland	(1,785)	NA	(3,794)	NA
Pep Boys	13,127	+ 31.0	22,567	+ 27.9
Pier I Imports[1]	7,736	+ 15.1	7,736	+ 15.1
Tandy[4]	56,926	+ 0.1	290,347	– 10.3
Tiffany & Co.	7,098	+ 27.0	12,542	+ 27.7
Toys "R" Us	26,494	+ 12.8	59,722	+ 18.0
Trans World Music	1,601	+ 62.9	4,050	+ 205.0
Williams-Sonoma	526	+ 307.8	974	+ 97.6
SUPERMARKETS				
Albertsons	52,866	+ 15.9	104,074	+ 15.6
A&P[1]	51,007	+ 12.4	51,007	+ 12.4
American	37,520	+ 52.3	65,447	+ 41.8
Bruno's[4]*	15,644	+ 32.2	60,138	+ 25.8
Delchamps[4]	5,170	– 8.6	14,385	+ 18.5
Eagle Food Centers*	1,642	– 33.7	4,358	– 14.0
Food Lion	40,836	+ 27.7	77,965	+ 28.5
Giant Food	25,798	+ 16.3	54,265	+ 11.4
Hannaford Bros.*	12,177	+ 13.7	22,002	+ 14.1
Kroger*	25,258	+ 1,786.3	14,993	NA
Marsh[1]	3,376	+ 27.4	3,376	+ 27.4
Quality Food	3,586	+ 8.4	6,713	+ 27.0
Ralphs Grocery*	(5,200)	NA	(7,900)	NA
Safeway	23,600	+ 206.5	38,600	+ 135.4
Smith's Food & Drug	8,354	+ 40.3	16,673	+ 43.3
Vons	10,400	NA	18,600	NA
Weis Markets	21,187	+ 2.6	40,167	– 2.2
Winn-Dixie[4]	43,700	+ 3.3	152,500	+ 13.4
CONVENIENCE STORES				
Circle K[4]	(747,351)	NA	(772,869)	NA
Dairy Mart*	1,874	+ 15.4	2,108	+ 90.3
National Convenience[4]*	(2,159)	NA	(1,624)	NA
Southland	(58,052)	NA	(179,533)	NA
Uni-Marts[3]	447	+ 44.7	1,789	+ 3.5
DRUG STORES				
Big B	(3,340)	NA	(2,943)	NA
Block Drug[1]	12,660	+ 12.4	12,660	+ 12.4
Drug Emporium[1]	1,832	+ 4.2	1,832	+ 4.2
Fay's*	3,253	+ 7.8	4,729	+ 8.1
Genovese*	795	+ 100.3	1,611	+ 6.3
Longs	15,660	+ 2.7	30,461	+ 2.6
Perry[3]*	724	NA	4,361	NA
Revco[4]	(15,098)	NA	(232,654)	NA
Rite Aid[1]*	25,206	+ 8.0	25,206	+ 8.0
Walgreen[3]	43,579	+ 13.2	134,176	+ 11.3
HOME CENTERS				
Grossman's	4,189	– 60.7	(1,174)	NA
Home Depot	47,239	+ 53.4	85,856	+ 51.3
Lowe's	29,960	+ 0.1	51,942	+ 16.7
Wolohan Lumber	4,164	+ 2.7	5,106	+ 4.1
NON-STORE RETAILERS				
Lands' End	(2,201)	NA	(500)	NA
Lillian Vernon[1]	1,401	+ 8.6	1,401	+ 8.6
Sharper Image	(1,565)	NA	(2,977)	NA
Spiegel	7,662	+ 14.9	15,425	+ 18.6
QVC Network*	(10,970)	NA	(25,224)	NA

NA = not applicable because of loss in either current or comparable period
NC = no change NR = not reported
*before extraordinary items or changes in accounting principles
†continuing operations only
[1]first quarter figures
[2]second quarter figures
[3]third quarter figures
[4]fourth quarter figures
Source: Company reports

AUGUST LACKLUSTER FOR ALL BUT APPAREL

CONSUMER CAUTION CREATES MODEST SAME-STORE FIGURES

Led by consumer demand for women's apparel, some department and specialty store chains reported strong sales increases in August. However, consumer caution produced lackluster performances for many other of the nation's top retailers, who tended to report modest single-digit increases for their same-store results.

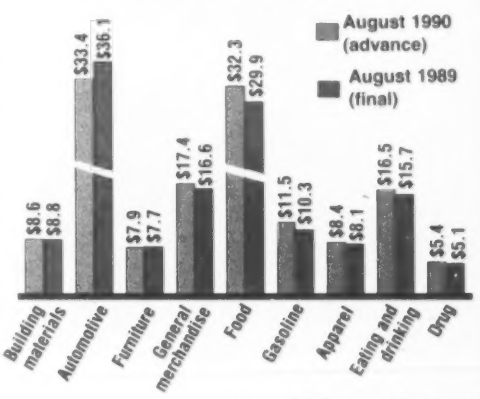
Many analysts believe concerns about the Iraqi crisis have increased consumer nervousness about spending. This, they say, may foreshadow a weak autumn and Christmas season.

Other analysts, however, think dampened consumer spending may have more to do with the faltering domestic economy—and fear of a recession—than with the problems in the Persian Gulf. "It's not just Iraq. There's some economic weakness outside that," says Alan Silverman, managing director of Ladenburg, Thalmann & Co., New York.

Among the best performers was Wal-Mart, whose total sales for August jumped 30% from last year. Sears experienced some improvement. Its same-store sales were up 4.1%. High on the disappointment list was J. C. Penney, where sales slid 1.2% from a record amount posted last year.

AUGUST SALES

(Seasonally adjusted, figures in billions)



Source: U.S. Department of Commerce

CHAIN PERFORMANCE

Company	August '90 sales (000)	% change	% change comp. stores	YTD sales (000)	% change YTD	% change YTD comp. stores
Sears	$2,634,180	+ 4.7	+ 4.1	$18,728,547	+ 2.8	+ 2.9
K mart	2,332,515	+11.1	+ 1.6	17,162,332	+12.2	+ 2.6
Wal-Mart	2,741,000	+30.0	+13.0	17,053,000	+26.0	+11.0
Penney	1,289,000	− 1.2	− 2.4	8,473,000	+ 3.9	+ 2.6
Dayton Hudson	1,190,000	+19.9	+ 8.0	7,340,000	+13.8	+ 6.1
May	762,400	+13.7	+ 6.4	5,141,500	+10.1	+ 5.2
Melville[1]	674,188	+ 8.4	N/R	4,929,497	+10.8	N/R
Walgreen[1]	506,840	+11.0	+ 7.6	3,975,191	+12.3	+ 8.9
Woolworth	515,000	+ 7.3	+ 2.5	3,004,000	+ 8.4	+ 4.9
The Limited	408,300	+14.0	+ 1.0	2,670,000	+18.0	+ 7.0
Carter Hawley Hale	199,700	+ 1.1	+ 0.1	1,413,900	+ 0.8	+ 0.2
Mercantile	174,219	+ 1.9	− 1.2	1,194,146	+ 2.1	+ 1.3
Circuit City[2]	187,400	+16.0	N/C	555,100	+18.0	+ 2.0
Hills	173,300	− 4.5	− 8.1	1,086,400	+ 7.3	+ 3.9
The Gap	166,000	+24.0	+14.0	973,000	+26.0	+18.0
Rose's	142,129	+ 2.5	− 0.3	847,556	+ 4.2	+ 1.9
Neiman-Marcus Group[3]	124,100	+ 3.9	− 1.5	N/R	N/R	N/R
Edison Bros.[1]	111,700	+17.5	N/R	632,600	+16.5	N/R
Jamesway	75,929	+21.0	+15.0	479,649	+13.0	+ 7.0
Ross	60,000	+13.0	N/C	364,000	+ 8.0	− 3.0
Dollar General	68,700	+13.0	+ 9.4	346,500	+ 4.9	+ 0.4
Best Buy[4]	49,000	+32.0	+ 3.0	278,000	+25.0	N/R
Gottschalks	20,200	+25.5	+11.3	134,300	+24.9	+11.9
Claire's	20,420	+46.0	+10.0	129,190	+50.0	+13.0

[1]fiscal year ends Dec. 31 [2]fiscal year ends Feb. 28 [3]fiscal year ends July 31 [4]fiscal year ends Mar. 31
N/R = not reported N/C = no change

Source: Company reports

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Chain Store Age EXECUTIVE
October 1990/Section Two

ERNST & YOUNG

Ninth Annual

Survey of Retail Information Technology Expenses and Trends

ACKNOWLEDGMENTS

The Ninth Annual Survey of Retail Information Technology Expenses and Trends was conducted jointly by Ernst & Young and Chain Store Age Executive. *GE Information Services is the exclusive advertising sponsor. The companies would like to thank the 157 retailers who took the time to fill out survey questionnaires. Without their cooperation, this study would not have been possible.*

ERNST & YOUNG

Ernst & Young is the preeminent worldwide professional services firm serving the retail industry. Nationwide, Ernst & Young serves more than 1,000 retail companies in various segments of retailing. The company assists retailers with their information technology needs in areas such as:

- Inventory Management Systems
- Quick Response Systems
- Point-of-Sale and In-Store Systems
- UPC, SCM and EDI
- Integrated Customer Information Systems
- Distribution Center Systems
- Compensation Systems

Ernst & Young's technology capabilities in these areas include strategic information systems planning and information systems design, development, implementation and integration.

For further information on this study or any of Ernst & Young's professional services, please contact Stephanie M. Shern, National Director of Retail Services, Ernst & Young, 277 Park Ave., New York, N.Y. 10172, (212) 773-3120.

GE Information Services

For more than 25 years, GE Information Services has been providing business information systems worldwide with affiliates and distributors in 35 countries.

Using one of the world's largest teleprocessing networks, GEIS is a recognized leader in Electronic Data Interchange, business communications messaging, and network management services for the development of applications expressly for the retail industry. Working with manufacturers, suppliers and retailers, GEIS provides a comprehensive portfolio of products and services including Messaging Systems, Payments Systems, Transportation Systems, Order Entry/Purchasing Systems, UPC*Express Catalog; EDI Services, Business Partner Implementation Programs, and EDI Translation Software.

To support these systems globally, GE Information Services offers its more than 7,000 clients (2,000 in the retail industry) comprehensive training and implementation assistance for prompt, effective start-up, as well as 24-hour worldwide support for quick problem resolution.

Chain Store Age EXECUTIVE

Chain Store Age Executive is the leading publication serving retail headquarters management. A monthly newsmagazine, *Chain Store Age Executive* reports and analyzes trends and strategies in the following areas:

- EDP/MIS/POS
- Communications
- Security
- Operations
- Finance
- Credit
- Marketing
- Corporate Strategies
- Store Design/Visual Merchandising
- Store Construction
- Physical Supports
- Human Resources
- Logistics/Distribution
- Leasing
- Shopping Center Development

Chain Store Age Executive, the original publication of Lebhar-Friedman Inc., of New York City, has been published since 1925. Its readers include chain headquarters decision makers from department stores, discount stores, specialty stores, supermarkets, convenience stores, variety stores, general merchandise stores, drug stores, home centers and hardware chains and non-store retailers as well as shopping center owners and developers.

METHODOLOGY

Retailer spending on Management Information Systems is at an all-time high, and the use of technologies like scanning and Electronic Data Interchange are becoming the rule for companies rather than the exception.

These and other findings are detailed within this supplement—which offers a complete report on the Ninth Annual Survey of Retail Information Technology Expenses and Trends conducted by Ernst & Young, the professional services firm.

The co-conductor of this survey is *Chain Store Age Executive*, which had been conducting an MIS poll of its own for the last two years. Last January, the magazine and Ernst & Young began talks about pursuing a survey cooperatively. By March, a jointly-produced survey form was printed and mailed to MIS executives across the country.

Responses were received from 157 companies, more than double the response rate that either survey had achieved the previous year. The size of the response rate has made it possible to examine data not only by size of company and by class of trade—but also by size of company *within* each class of trade where at least 16 responses were received.

This report begins with a section on overall findings and continues with separate sections concerning six specific classes of trade. Each of these sections are three pages in length. For easy cross-referencing, the sections cover subjects in the same order, both in the text and in chart material.

A six-page appendix containing additional chart material appears at the end of the report.

	1989		1988	
	Not allocated	Allocated to other expense centers	Not allocated	Allocated to other expense centers
Department stores	1.06	.25	1.09	.25
General merchandise/ mass merchants	.83	.59	.76	.60
Specialty apparel	.96	.24	.97	.24
Specialty hardlines	.80	.44	.74	.37
Specialty other	1.14	.26	.96	.24
Supermarkets	.39	.26	.38	.25
All participants	.85	.34	.80	.32

			NUMBER OF PARTICIPANTS BY 1989 SALES VOLUME IN $MILLIONS				
	Total 1989 sales (in $millions)	Average 1989 sales (in $millions)	All participants	Under $100	$100-$399	$400-$999	$1,000 or more
Total number of survey participants	$156,465	$ 997	157 100%	66 100%	45 100%	21 100%	25 100%
Department stores	20,643	1,290	16 10%	7 11%	6 13%	1 5%	2 8%
General merchandise/mass merchants	78,519	4,907	16 10%	2 3%	3 7%	4 19%	7 28%
Specialty apparel	6,808	309	22 14%	10 15%	7 16%	2 10%	3 12%
Specialty hardlines	8,936	248	36 24%	22 31%	10 22%	1 27%	3 8%
Specialty other	12,006	445	27 17%	9 14%	10 22%	6 27%	2 8%
Supermarkets	14,985	833	18 11%	9 14%	3 7%	2 10%	4 16%

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OVERALL FINDINGS

The 157 companies that responded to the Ernst & Young/*Chain Store Age Executive* Information Technology survey included department stores, general merchandise/mass merchants, specialty stores, supermarkets, drug stores, convenience stores and others. Several of these classes of trade (those that garnered 16 respondents or more) are examined in detail later in this report. What follows is a look at how retailers responded in the aggregate.

Expenses and Capital Expenditures: The respondents reported total MIS expenses of $807.9 million in 1989. On a same-respondent basis, their MIS expenses rose 9.36% over 1988. As a percent of sales, too, expenses increased—0.83% in 1989 against 0.80% in 1988, for a rise of 3.75% on a same-respondent basis.

Most retailers (57%) said that MIS expenses were 0.25% to 0.99% of their sales revenue. Thirteen percent said they were less than 0.25%, and 26% said they were 1%-2%. Four percent said MIS expenses represented more than 2% of their sales.

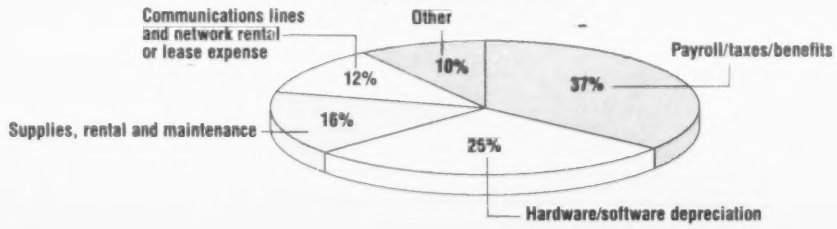
POS devices and controllers accounted for the bulk of capital expenditures (46%). Other costs were mainframe and peripherals (25%), backroom and administrative equipment (21%) and software (8%). Among the $1 billion-plus companies, spending on POS devices shot to 69% of the total, while spending on software was as low as 1%.

Companies spent 49% of their systems development payroll costs on new development in 1989, as opposed to on-going development. This figure was up 9.1% from 1988 on a same-respondent basis.

Organization: The average number of full-time employees in a retail MIS department was 57. However, 44% of respondents had MIS departments of 10 employees or fewer. The largest departments were in $1 billion-plus companies, which had an average of 264 MIS employees.

The average MIS department is split 27% management, 73% staff. Companies with sales of $1 billion or more are slightly top-heavier with management (31%). Within the department, 43% of personnel concentrate on systems development, 14% on tech-

BREAKDOWN OF 1989 MIS EXPENSES
(based on 97 responses)



	PARTICIPANTS BY 1989 SALES VOLUME IN $ MILLIONS									
	All participants		Under $100		$100-$399		$400-$999		$1,000- or more	
	1989	1988	1989	1988	1989	1988	1989	1988	1989	1988
Total number of survey participants	157	157	66	66	45	45	21	21	25	25
Number of responses to this question	134 100%	129 100%	50 100%	49 100%	40 100%	38 100%	20 100%	18 100%	24 100%	24 100%
Total expenses (in $millions)	807.9	728.5	16.6	14.4	73.5	60.5	108.8	88.9	609.0	564.7
Average expenses (in $millions)	6.0	5.6	.3	.3	1.8	1.6	5.4	4.9	25.4	23.5
Expenses under $350,000	31 23%	34 26%	29 58%	30 61%	2 5%	4 11%	— —	— —	— —	— —
$350,000- under $1 million	31 23%	28 22%	20 40%	18 37%	11 28%	10 26%	— —	— —	— —	— —
$1 million- under $5 million	40 30%	38 30%	1 2%	1 2%	24 59%	23 60%	13 65%	11 61%	2 8%	3 13%
$5 million or more	32 24%	29 22%	— —	— —	3 8%	1 3%	7 35%	7 39%	22 92%	21 87%

OVERALL FINDINGS

nical support, 37% on computer operations and 6% on administration.

Profile of the Director: Most heads of MIS departments are known as either the vice president of MIS (34%) or the director of MIS (26%). Generally, the larger the company, the more likely the vp title.

MIS heads tend to report directly to a chief financial officer (44%) or to a chief executive officer (26%). They have been with the company an average of nine years, and have headed the MIS department an average of five years.

Most MIS heads are 41 to 49 years old (42%), especially in the $1 billion-plus companies (56%).

The average pay for a head of MIS before incentives was $66,306 in 1989. The average incentive compensation, including bonuses and options, was $21,823.

Use of Scanning: Sixty-six percent of retailers are now making some use of scanning technology. Among $1 billion-plus companies, this figure is as high as 96%, but even among companies with sales of less than $100 million, almost half are scanning (49%).

Forty-six percent of retailers say they are scanning at the point of sale, 29% mention scanning in the warehouse or distribution center, and 20% say they are doing non-POS scanning in the store.

Among companies that now scan, 46% say they intend to eventually be 100% scanned at the point of sale. Thirty percent say they intend to be 100% scanned in the warehouse or distribution center, and 26% intend to scan 100% in the store (non-POS).

UPC-A remains the most commonly-used type of bar code (58%). Code 128 and Interleaved 2 of 5 tie for a distant second (10% each).

The most popular type of scanner is the hand-held variety (64%), except in supermarkets, where the fixed-head stationary type has established a stronghold (100%). Only 9% of retailers indicated making use of wands.

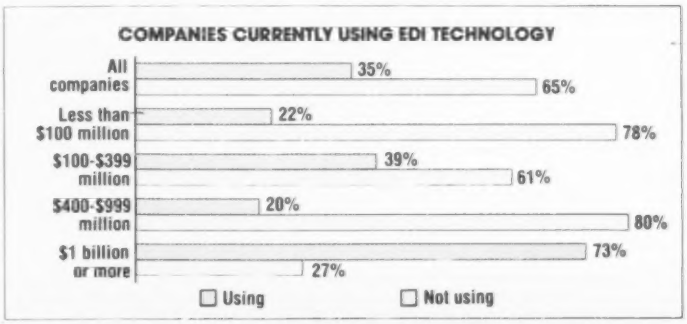
Respondents who scan at the point of sale have an average of 10 scanners per store. Twelve percent indicated having more than 20 scanners.

Among respondents who are not planning to scan, 56% said it was because scanning was inappropriate for their type of merchandise. Thirty-seven percent cited the high cost of scanning, 30% cited the insufficient quantity of vendor-marked goods.

Use of EDI: Thirty-five percent of companies are now using EDI. Among $1 billion-plus companies, this figure is as high as 73%.

When asked whether they planned to use EDI, 65% of companies said that they did. Among $1 billion-plus companies, this figure was as high as 100%.

Companies which now use EDI are exchanging data with an average of 4.49% of their apparel vendors. Among $1 billion-plus companies, the average is 12.78%. Exchanges of data with non-apparel vendors are higher—an average of 11.41% for re-



	PARTICIPANTS BY 1989 SALES VOLUME IN $MILLIONS				
	All participants	Under $100	$100-$399	$400-$999	$1,000 or more
Total number of survey participants	157	66	45	21	25
Number of responses to this question	154 100%	65 100%	45 100%	20 100%	24 100%
Number of full-time equivalent MIS personnel:					
1 to 10	68 44%	57 88%	11 24%	— —	— —
11 to 25	34 22%	8 12%	22 49%	4 20%	— —
26 to 50	15 10%	— —	8 18%	6 30%	1 4%
51 to 100	14 9%	— —	4 9%	8 40%	2 8%
101 to 200	17 11%	— —	— —	2 10%	15 63%
Over 200	6 4%	— —	— —	— —	6 25%
Total full-time equivalent MIS personnel	8,853	364	1,011	1,152	6,326
Average number of full-time equivalent MIS personnel	57	6	22	58	264

OVERALL FINDINGS

tailers overall, and 16.31% for the $1 billion-plus companies.

Most retailers that use EDI said they were involved in programs with a total of 1-25 vendors (50%). Thirteen percent of EDI users, all with sales of $1 billion or more, indicated they were involved in EDI programs with 100 vendors or more.

Twenty-two percent of EDI users indicated that the vendors with which they were exchanging data totaled 50% or more of their purchase order dollar volume, while 49% of users said the vendors' total was 4% of that volume or less.

Respondents that use EDI said they are using it for the following transactions: Purchase orders (34%), purchase order acknowledgments (14%), vendor invoices (18%), vendor advance shipping notices (9%), sending point-of-sale data (26%) and payments (6%).

Most retailers using EDI cited shortening the reorder fulfillment cycle as a primary reason (39%). Other reasons cited were reducing inventory levels (24%) and improving the accuracy of data (21%).

Retailers indicated that the VICS/ANSI X.12 communication format has established itself as the leading EDI format in all classes of trade (64%). The exception is in supermarkets, where the Uniform Communication Standard (UCS) is favored (100%).

Most retailers are purchasing packaged EDI software (31%), or software provided by a third party network (43%). Relatively little (26%) is developed in-house.

POS/In-Store Systems: About 12% of retailers said they installed their present POS system more than 10 years ago. Sixteen percent said it is 6-10 years old, and 46% said theirs is 2-6 years old.

Programmable cash registers (46%) and electronic cash registers (36%) are the favored types of POS devices.

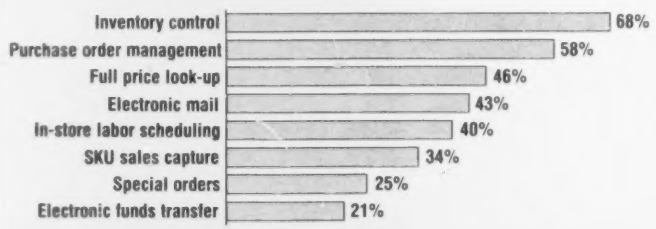
Asked about the likely operating system of their future in-store system, 35% of retailers said it would be DOS, 12% mentioned OS/2, and 22% said it would be proprietary.

Twenty-nine percent of retailers said they plan to migrate their in-store systems to a platform-independent, UNIX-based environment. More than three-quarters of these said they plan to do so by 1992. These plans were particularly prevalent among companies with sales of $1 billion or more (55%).

Fifty-two percent of retailers said they use hand-held terminals in-store, and cited the following applications: ordering (31%), physical inventory (27%), price verification (21%), store receiving (17%), price changes (8%) and sales recording (8%).

Emerging Technologies: Up and coming applications which retailers plan to implement in the years ahead include signature verification systems (3%), frequent buyer programs (39%), electronic shelf tags (12%), wireless POS devices (16%), interactive promotional video displays (11%), electronic aisle billboards (3%), self-service merchandise dispensing systems (1%), imaging systems (21%), interactive voice response systems (12%), expert systems (26%) and interactive home shopping services (6%).

APPLICATIONS INTENDED FOR IMPROVEMENT WITHIN TWO YEARS



	PARTICIPANTS BY 1989 SALES VOLUME IN $MILLIONS				
	All participants	Under $100	$100-$399	$400-$999	$1,000 or more
Total number of survey participants	157	66	45	21	25
Number of responses to this question	129 100%	51 100%	35 100%	19 100%	24 100%
Currently scanning a bar code	85 66%	25 49%	23 66%	14 74%	23 96%
At the point of sale	59 46%	18 35%	15 43%	10 53%	16 67%
Into the warehouse/ distribution center	38 29%	7 14%	9 26%	6 32%	16 67%
In the store (non-POS)	26 20%	9 18%	7 20%	3 16%	7 29%
Other	12 9%	6 12%	3 9%	2 11%	1 4%
Not currently scanning	44 34%	26 51%	12 34%	5 26%	1 4%

DEPARTMENT STORES

Of the 16 department store retailers that responded to the Ernst & Young/ *Chain Store Age Executive* IT survey, nine had 20 stores or less, and seven had 21 to 1,000 stores. Here's a look at what they reported:

Expenses and Capital Expenditures: The respondents reported total MIS expenses of $236.9 million in 1989, and roughly the same amount in 1988. As a percent of sales, expenses were off slightly on a same-respondent basis—1.06% in 1989 against 1.09% in 1988, a decline of 2.75%. Nonetheless, department stores can boast having the largest MIS expenses, as a percent of sales, of any class of trade.

Most of the respondents (57%) said that MIS expenses were 0.25% to 0.99% of their sales revenue. None said they were less than 0.25%, and none said they were more than 2%. However, a large number (43%) said MIS expenses were as much as 1%-2% of their sales.

POS devices and controllers accounted for the bulk of capital expenditures (69%) for department stores. No other class of trade devoted as great a share of its MIS capital spending to this category.

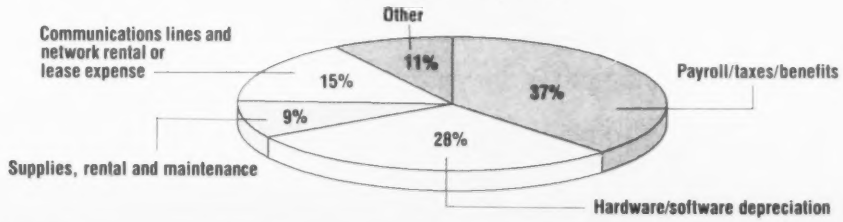
Department stores spent 37% of their systems development payroll costs on new development in 1989, as opposed to ongoing development. On a same-respondent basis, this figure was up 6.1% from 1988.

Organization: The average number of full-time employees in a department store MIS department was 153, the highest average of any class of trade. However, 50% of respondents had MIS departments of 10 employees or less. The largest departments were in the two $1 billion-plus companies, which had an average of 1,070 MIS employees each.

The average department store MIS department is split 59% management, 41% staff. Companies with sales of $1 billion or more are even more top-heavy with management (66%). Within the department, 35% of personnel concentrate on systems development, 16% on technical support, 45% on computer operations, and 4% on administration.

Profile of the Director: Most heads of MIS departments in department stores are known as either the vice president of MIS (30%) or the director of MIS (19%).

BREAKDOWN OF 1989 MIS EXPENSES
(based on 13 responses)



	PARTICIPANTS BY 1989 SALES VOLUME IN $ MILLIONS									
	Department stores		Under $100		$100-$399		$400-$999		$1,000- or more	
	1989	1988	1989	1988	1989	1988	1989	1988	1989	1988
Total number of survey participants	16	16	7	7	6	6	1	1	2	2
Number of responses to this question	14 100%	14 100%	7 100%	7 100%	4 100%	4 100%	1 100%	1 100%	2 100%	2 100%
Total expenses (in $millions)	236.9	237.1	2.7	2.5	11.3	10.8	10.3	10.5	212.6	213.3
Average expenses (in $millions)	16.9	16.9	.4	.4	2.8	2.7	10.3	10.5	106.3	106.7
Expenses under $350,000	4 29%	4 29%	4 57%	4 57%	— —	— —	— —	— —	— —	— —
$350,000- under $1 million	5 36%	4 29%	3 43%	3 43%	2 50%	1 25%	— —	— —	— —	— —
$1 million- under $5 million	1 7%	2 13%	— —	— —	1 25%	2 50%	— —	— —	— —	— —
$5 million or more	4 29%	4 29%	— —	— —	1 25%	1 25%	1 100%	1 100%	2 100%	2 100%

DEPARTMENT STORES

They tend to report directly to a chief financial officer (61%). They have been with the company an average of 15 years, and have headed the MIS department an average of eight years.

Most are 41 to 49 years old (56%). This is also true in the $1 billion-plus companies (50%).

The average pay for a department store head of MIS before incentives was $66,500 in 1989. The average incentive compensation, including bonuses and options, was $41,317, by far the largest incentive package of any class of trade. Forty percent of companies offer a salary of under $50,000, while 20% pay $90,000 or more.

Use of Scanning: Fifty percent of department store companies are now making some use of scanning technology. Among $1 billion plus companies, this figure is as high as 100%. On the other hand, among surveyed companies with sales of less than $100 million, none are scanning.

Twenty-nine percent of the respondents say they are scanning at the point of sale, 21% mention scanning in the warehouse or distribution center, and 7% say they are doing non-POS scanning in the store.

Among department store companies that now scan, 43% say they intend to eventually be 100% scanned at the point of sale. None, however, say they intend to be 100% scanned in the warehouse or distribution center, and only 25% intend to scan 100% in the store (non-POS).

UPC-A is the most commonly-used type of bar code in department stores (60%). Thirty percent of the companies, however, use Code 128, making department stores the heaviest users of that format.

–The most popular type of scanner in department stores is the hand-held variety (78%). Twenty-two percent of respondents mentioned using wands, by far the largest penetration of wands for any class of trade.

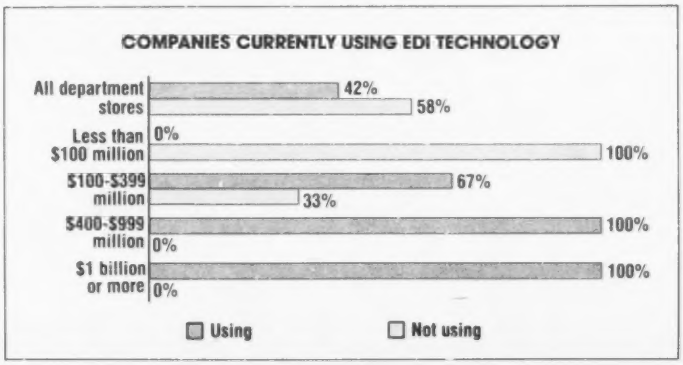
Departments stores which scan at the point of sale have an average of 19 scanners per store. Thirty-three percent indicated having more than 20 scanners.

Among department stores which are not planning to scan, 83% percent cited the high cost of scanning. No other class of trade was as emphatic about this issue. Thirty-three percent cited the insufficient quantity of vendor-marked goods.

Use of EDI: Forty-two percent of department store companies are now using EDI. Among $1 billion-plus companies, all are using it. Among companies with sales below $100 million, none are.

When asked whether they planned to use EDI, 82% of companies said that they did. Among companies with sales below $100 million, 71% responded in the affirmative.

Department stores which now use EDI are exchanging data with an average of 7.17% of their apparel vendors. Exchanges of data with non-apparel vendors are much lower—an average of 0.17%.



	PARTICIPANTS BY 1989 SALES VOLUME IN $MILLIONS				
	Department stores	Under $100	$100-$399	$400-$999	$1,000 or more
Total number of survey participants	16	7	6	1	2
Number of responses to this question	16 100%	7 100%	6 100%	1 100%	2 100%
Number of full-time equivalent MIS personnel:					
1 to 10	8 50%	7 100%	1 17%	— —	— —
11 to 25	2 13%	— —	2 33%	— —	— —
26 to 50	2 13%	— —	2 33%	— —	— —
51 to 100	2 13%	— —	1 17%	1 100%	— —
101 to 200	— —	— —	— —	— —	— —
Over 200	2 13%	— —	— —	— —	2 100%
Total full-time equivalent MIS personnel	2,453	35	189	90	2,139
Average number of full-time equivalent MIS personnel	153	5	32	90	1,070

DEPARTMENT STORES

Sixty percent of department stores which use EDI indicated they were involved in programs with 25 vendors or less. Forty percent said they were still in the pilot test phase.

Seventeen percent of EDI users indicated that the vendors with which they were exchanging data totaled 11%-49% of their purchase order dollar volume, while 83% said the vendors' total was 4% of that volume or less.

Respondents that use EDI said they are using it for the following transactions: purchase orders (38%), vendor invoices (13%), vendor advance shipping notices (25%) and sending point-of-sale data (38%).

Most department stores using EDI cited reducing inventory levels, or reducing expenses, as the primary reasons (40% each). Other reasons cited were improving the accuracy of data (20%) and gaining a competitive edge (20%). Shortening the reorder fulfillment cycle, the top reason cited by retailers overall, was not mentioned by any department store company.

Department stores indicated that the VICS/ANSI X.12 communication format has established itself as the leading EDI format (88%). Thirteen percent indicated they were using UCS and 13% said they were using TDCC.

Most of the respondents are purchasing packaged EDI software (43%) or software provided by a third party network (71%). No one said they had developed their software in-house.

POS/In-Store Systems: Department stores are using the oldest point-of-sale systems of any class of trade. Thirty-one percent of department store retailers said they installed their present POS system more than 10 years ago. Nineteen percent said their system is 6-10 years old, and 38% said it is 2-4 years old.

Programmable cash registers (67%) and electronic cash registers (33%) are the only types of POS devices that department store retailers mentioned using.

Asked about the likely operating system of their future in-store system, 30% of respondents said it would be DOS, 40% mentioned OS/2, and 20% said it would be proprietary.

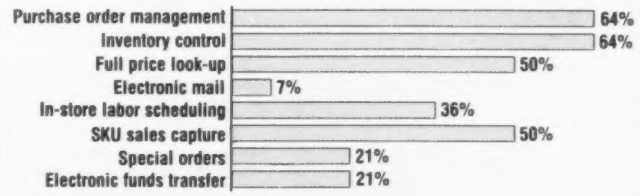
Seventeen percent of department store retailers said they plan to migrate their in-store systems to a platform-independent, UNIX-based environment. Half of these plan to so by 1992. Overall, fewer department stores had plans for migration to UNIX than any other class of trade.

Twenty-five percent of department stores said they plan to have multiple POS/in-store systems vendors. Department stores had fewer such plans than any other class of trade.

Fifteen percent of department store retailers said they use hand-held terminals in-store, and cited physical inventory as the only application. No other class of trade reported making as little use of hand-helds in-store.

Emerging Technologies: Up and coming applications which department stores plan to implement in the years ahead include frequent buyer programs (25%), electronic shelf tags (10%), wireless POS devices (10%), interactive promotional video displays (10%), imaging systems (10%), interactive voice response systems (22%), expert systems (20%) and interactive home shopping services (7%).

APPLICATIONS INTENDED FOR IMPROVEMENT WITHIN TWO YEARS



	PARTICIPANTS BY 1989 SALES VOLUME IN $MILLIONS				
	Department stores	Under $100	$100-$399	$400-$999	$1,000 or more
Total number of survey participants	16	7	6	1	2
Number of responses to this question	14 100%	5 100%	6 100%	1 100%	2 100%
Currently scanning a bar code	7 50%	— —	5 83%	— —	2 100%
At the point of sale	4 29%	— —	3 50%	— —	1 50%
Into the warehouse/ distribution center	3 21%	— —	2 33%	— —	1 50%
In the store (non-POS)	1 7%	— —	1 17%	— —	— —
Other	— —	— —	— —	— —	— —
Not currently scanning	7 50%	5 100%	1 17%	1 100%	— —

CASE STUDY 1: ROSE'S STORES

CHAIN FORGES AHEAD WITH EDI, SCANNING

Rose's Stores, Henderson, N.C., got started with EDI in 1989. Although the 257-store chain can by no means claim to be a pioneer of the technology, it certainly hasn't dawdled in the implementation.

Already, Rose's is on line with some 100 vendors (mainly apparel), and its goal is to add 300 more by the end of the year.

"So far, we're doing purchase orders and acknowledgments electronically," says Ed Anderson, Rose's chief financial officer. "We're not on a pure Quick Response program yet, but that's coming. We want to push EDI as far as we can. We believe it works."

Rose's, a discount store company with sales of $1.5 billion in 1989, is using the VICS ANSI X.12 EDI standards. GE Information Services is acting as Rose's major third party EDI network.

"We chose GE because they had the most to offer. A large number of our vendors were in their network already," Anderson says.

"GE's people are real professionals. They pushed the process for us. We learned a tremendous amount about EDI from them," he says.

Rose's is moving equally rapidly into scanning. The company, which had been doing OCR-A wanding, began installing slot scanners at its front-end checkstands and scanning guns at its area registers early this year.

Anderson says he expects Rose's will be scanning fully by the end of the first half of 1991.

The chain is UPC-ticketing its apparel with a Xerox 8700 printer at headquarters and with Monarch printers at store level. For imported items, Rose's hired a third party vendor, Soabar, to handle the UPC ticketing.

Technology leapfrog: Anderson concedes that Rose's may be slightly late in getting into scanning, "but by getting into it a little late, we've been able to do some leapfrogging.

"We now have the latest in scanning technology, and the latest equipment to run a UPC environment in-store. We were able to leapfrog because the cost of scanners has gone down precipitously.

"Five years ago, laser gun or slot scanners cost $3,000-$4,000 each, and now you can get one for about $1,000. Scanning is becoming the rule rather than the exception because of the price," he says.

Anderson further points out that before Rose's could make the move to scanning, it had to make a significant upgrade in its point-of-sale controllers.

"The older controllers weren't sophisticated enough to handle the number of sku's and price look-ups that we needed. We took out those controllers, and replaced them with PCs running on software from Post Software International."

At the same time, Anderson says, Rose's was able to keep its investment in its Fujitsu registers.

Anderson believes that one area in which Rose's has shown leading-edge sophistication is the area of telecommunications.

"We're using satellite technology at all of our locations. This has been a significant area of opportunity for us," he says. "It has fixed our data communications costs, improved reliability, and allowed for video transmissions."

Rose's has just built a $3 million, 27,500-sq.-ft. data center in Henderson to house its mainframe and all its telecommunications equipment.

"Telecommunications is something we've exploited well for a company our size," Anderson says.

GENERAL MERCHANDISE/MASS MERCHANTS

Of the 16 general merchandise/mass merchant companies that responded to the Ernst & Young/*Chain Store Age Executive* IT survey, two had 20 stores or less. Six had 21 to 100 stores, four had 101 to 500 stores, and three had 501 to 1,000 stores. Here's a look at what they reported:

Expenses and Capital Expenditures: The respondents reported total MIS expenses of $204.9 million in 1989. On a same-respondent basis, their MIS expenses rose 16.14% over 1988. As a percent of sales, too, expenses increased—0.79% in 1989 against 0.76% in 1988, for a rise of 3.95% on a same-respondent basis.

Most of the respondents (72%) said that MIS expenses were 0.25% to 0.99% of their sales revenue. Fourteen percent said they were less than 0.25%, and seven percent said they were 1%-2%. Another seven percent of the respondents said MIS expenses accounted for more than 2% of their sales.

POS devices and controllers accounted for the bulk of capital expenditures among the respondents (58%). Indeed, the share for POS was higher for general merchandise/mass merchants than for any other class of trade. Other costs were mainframe and peripherals (14%), backroom and administrative equipment (26%) and software (2%).

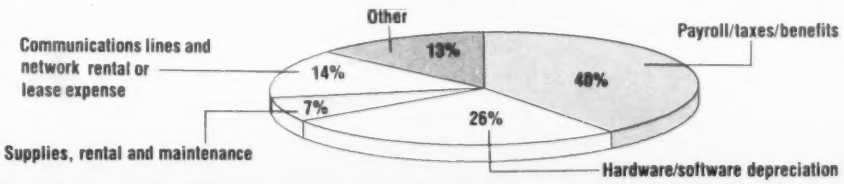
Companies spent 56% of their systems development payroll costs on new development in 1989, as opposed to on-going development. On a same-respondent basis, this figure was up 12.1% from 1988. In both years, the figure was highest among all classes of trade.

Organization: The average number of full-time employees in a general merchandise/mass merchant's MIS department was 144, second in size only to department stores. Twenty percent of respondents had MIS departments of 10 employees or less. The largest departments were in $1 billion-plus companies, which had an average of 314 MIS employees.

The average MIS department is split 10% management, 90% staff. This represents the smallest share for management of any class of trade. Within the department, 58% of personnel concentrate on systems development, 14% on technical support, 23% on computer operations and 5% on administration.

Profile of the Director: Most heads of MIS departments for general merchandise/mass mer-

BREAKDOWN OF 1989 MIS EXPENSES
(based on 6 responses)



	PARTICIPANTS BY 1989 SALES VOLUME IN $ MILLIONS									
	General merchandise/mass merchants		Under $100		$100-$399		$400-$999		$1,000- or more	
	1989	1988	1989	1988	1989	1988	1989	1988	1989	1988
Total number of survey participants	16	16	2	2	3	3	4	4	7	7
Number of responses to this question	14 100%	14 100%	1 100%	1 100%	3 100%	3 100%	4 100%	4 100%	6 100%	6 100%
Total expenses (in $millions)	204.9	176.4	.03	.03	3.0	3.0	22.6	18.9	179.3	154.5
Average expenses (in $millions)	14.6	12.6	.03	.03	1.0	1.0	5.7	4.7	29.9	25.7
Expenses under $350,000	1 7%	2 14%	1 100%	1 100%	— —	1 33%	— —	— —	— —	— —
$350,000-under $1 million	2 14%	— —	— —	— —	2 67%	— —	— —	— —	— —	— —
$1 million-under $5 million	4 29%	6 43%	— —	— —	1 33%	2 67%	3 75%	3 75%	— —	1 17%
$5 million or more	7 50%	6 43%	— —	— —	— —	— —	1 25%	1 25%	6 100%	5 83%

GENERAL MERCHANDISE/MASS MERCHANTS

chants are known as vice president of MIS (44%). Twenty-five percent hold the title of senior vice president. Only 13% are known as director of MIS, a common title among MIS heads in other trade classes.

These MIS heads tend to report directly to a chief financial officer (37%) or to a chief executive officer or chief operating officer (25% each). They have been with the company an average of 10 years, and have headed the MIS department an average of three years.

Most are 41 to 49 years old (63%). Only 6% are younger than 35, and 25% are 50 or older.

The average pay for a general merchandise/mass merchant head of MIS before incentives was $70,375 in 1989, the highest among all classes of trade. The average incentive compensation, including bonuses and options, was $21,200. Thirty-eight percent of respondents had salaries above $70,000, while 25% were paid below $50,000.

Use of Scanning: All of the general merchandise/mass merchants that responded to the survey are now making some use of scanning technology. Such unanimity was found in no other class of trade. Only supermarkets (94%) came close.

Ninety-three percent of respondents say they are scanning at the point of sale, 57% mention scanning in the warehouse or distribution center, and 43% say they are doing non-POS scanning in the store.

Fifty percent say they intend to eventually be 100% scanned at the point of sale. Seventy-one percent say they intend to be 100% scanned in the warehouse or distribution center, and 27% intend to scan 100% in the store (non-POS).

UPC-A remains the most commonly-used type of bar code among general merchandise/mass merchants (87%). Interleaved 2 of 5 also has a strong following (27%) as does Code 128 (20%).

The most popular type of scanner among respondents is the hand-held variety (79%). Many also make substantial use of the fixed-head stationary type (57%).

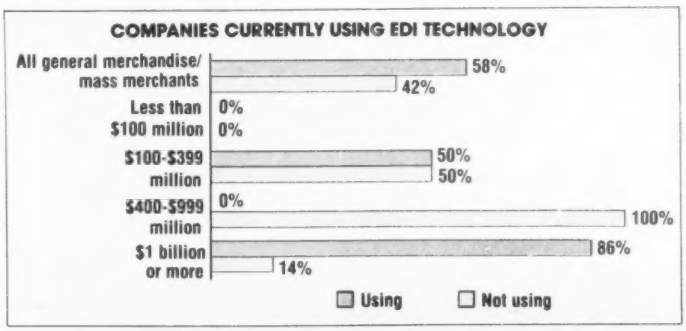
General merchandise/mass merchants have an average of 17 scanners per store. Thirty-six percent indicated having more than 20 scanners.

Use of EDI: Fifty-eight percent of general merchandise/mass merchants are now using EDI, the highest penetration of any class of trade. Among $1 billion-plus companies, this figure is as high as 86%, while among companies with sales below $399 million, it is no lower than 50%.

When asked whether they planned to use EDI, 89% of companies said that they did. Again, this represented the strongest level of support for EDI of any class of trade.

Respondents which now use EDI are exchanging data with an average of 18.5% of their apparel vendors. Exchanges of data with non-apparel vendors are slightly lower—an average of 16%.

Most that use EDI said they were involved in programs with a



	PARTICIPANTS BY 1989 SALES VOLUME IN $MILLIONS				
	General merchandise/mass merchants	Under $100	$100-$399	$400-$999	$1,000 or more
Total number of survey participants	16	2	3	4	7
Number of responses to this question	15 100%	2 100%	3 100%	4 100%	6 100%
Number of full-time equivalent MIS personnel:					
1 to 10	3 20%	2 100%	1 33%	— —	— —
11 to 25	2 13%	— —	2 67%	— —	— —
26 to 50	2 13%	— —	— —	2 50%	— —
51 to 100	2 13%	— —	— —	2 50%	— —
101 to 200	3 20%	— —	— —	— —	3 50%
Over 200	3 20%	— —	— —	— —	3 50%
Total full-time equivalent MIS personnel	2,160	5	44	230	1,881
Average number of full-time equivalent MIS personnel	144	3	15	58	314

GENERAL MERCHANDISE/MASS MERCHANTS

total of more than 100 vendors (40%). Twenty percent indicated that they were only in a pilot test with EDI.

Forty-three percent of EDI users indicated that the vendors with which they were exchanging data totaled 50% or more of their purchase order dollar volume, while 43% of users said the vendors' total was 9% of that volume or less.

General merchandise/mass merchants that use EDI said they are using it for the following transactions: Purchase orders (46%), purchase order acknowledgments (23%), vendor invoices (31%), vendor advance shipping notices (8%), sending point-of-sale data (31%) and payments (8%).

Most cited shortening the reorder fulfillment cycle (36%) or reducing inventory levels (36%) as a primary reason for using EDI. Other reasons cited were improving the accuracy of data (27%), gaining a competitive edge (27%), and reducing expenses (9%).

The VICS/ANSI X.12 communication format has established itself as the dominant EDI format among general merchandise/mass merchants (91%). The Uniform Communication Standard (UCS), most common among supermarkets, also has a strong following in this class of trade (36%).

Most respondents are purchasing EDI software provided by a third party network (55%). A substantial number (36%) are developing software in-house, while 27% are buying packaged EDI software.

POS/In-Store Systems: Of all classes of trade, general merchandise/mass merchants have the newest point-of-sale systems. Only 13% said they installed their present POS system more than 10 years ago. Six percent said theirs is 4-6 years old, and 44% said it is 2-4 years old. Thirty-seven percent said they have had their point-of-sale system for two years or less.

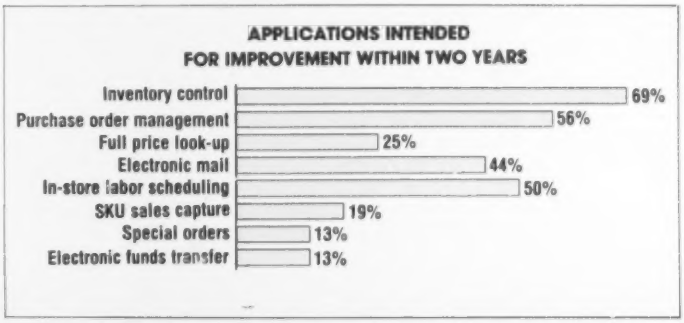
Programmable cash registers (88%) are by far the favored type of POS device among general merchandise/mass merchants. A substantial level of use was also found for electronic cash registers (38%) and hand-held terminals (25%).

Asked about the likely operating system of their future in-store system, 40% of mass merchants said it would be DOS, 13% mentioned OS/2, and 7% said it would be proprietary.

Thirty-eight percent said they plan to migrate their in-store systems to a platform-independent, UNIX-based environment. Seventy-five percent of these said they plan to do so by 1992. Of all classes of trade, only supermarkets (47%) were more strongly committed to migrating to UNIX.

Eighty-seven percent said they use hand-held terminals in-store, and cited the following applications: ordering (50%), physical inventory (44%), price verification (50%), store receiving (31%), price changes (13%) and sales recording (6%).

Emerging Technologies: Up and coming applications which general merchandise/mass merchants plan to implement in the years ahead include frequent buyer programs (33%), electronic shelf tags (50%), wireless POS devices (45%), interactive promotional video displays (9%), imaging systems (45%), expert systems (58%) and interactive home shopping services (13%).



	PARTICIPANTS BY 1989 SALES VOLUME IN $MILLIONS				
	General merchandise/mass merchants	Under $100	$100-$399	$400-$999	$1,000 or more
Total number of survey participants	16	2	3	4	7
Number of responses to this question	14 100%	2 100%	2 100%	4 100%	6 100%
Currently scanning a bar code	14 100%	2 100%	2 100%	4 100%	6 100%
At the point of sale	13 93%	2 100%	2 100%	4 100%	5 83%
Into the warehouse/ distribution center	8 57%	1 50%	— —	2 50%	5 83%
In the store (non-POS)	6 43%	1 50%	1 50%	1 25%	3 50%
Other	2 14%	— —	1 50%	— —	1 17%
Not currently scanning	— —	— —	— —	— —	— —

SUPERMARKETS

Of the 18 supermarket companies that responded to the Ernst & Young/*Chain Store Age Executive* IT survey, nine had 20 stores or less. Five had 21 to 100 stores, and three had more than 100 stores. Here's a look at what they reported:

Expenses and Capital Expenditures: The respondents reported MIS expenses totaling $69.6 million in 1989. On a same-respondent basis, their MIS expenses rose 14.53% over 1988. As a percent of sales, too, expenses increased, albeit not as much—0.39% in 1989 against 0.38% in 1988, for a rise of 2.63% on a same-respondent basis. Because of their high volume, it is not surprising that supermarkets spend less on MIS as a percent of sales than any other class of trade.

The largest share of the respondents (50%) said MIS expenses were less than 0.25% of their sales revenue. Thirty percent said they were between 0.25% and 0.50%. Only 20% said they were more than 0.51%.

Backroom and administrative equipment accounted for the bulk of capital expenditures for supermarkets (45%). Other costs were mainframe and peripherals (40%), POS devices and controllers (2%) and software (13%). In each category, the shares posted were the highest of any class of trade. The exception was POS devices and controllers, where supermarkets posted the lowest share of all classes of trade.

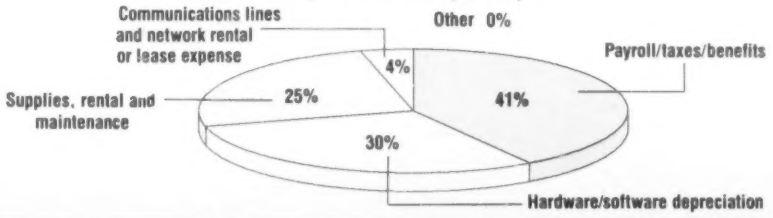
Supermarkets spent 50% of their systems development payroll costs on new development in 1989, as opposed to on-going development. On a same-respondent basis, this figure was up 38.2% from 1988.

Organization: The average number of full-time employees in a supermarket MIS department was 36. Of all classes of trade, only specialty stores posted a lower average. Fifty-nine percent of supermarkets had MIS departments of 10 employees or less. The largest departments were in $1 billion-plus companies, which had an average of 123 MIS employees.

The average supermarket MIS department is split 13% management, 87% staff. Companies with sales of less than $100 million are slightly top-heavier with management (25%). Within the department, 28% of personnel concentrate on systems development, 8% on technical support, 56% on computer operations and 8% on administration.

Profile of the Director: Most heads of supermarket MIS de-

BREAKDOWN OF 1989 MIS EXPENSES
(based on 7 responses)



ANALYSIS OF MIS EXPENSES

	PARTICIPANTS BY 1989 SALES VOLUME IN $ MILLIONS									
	Supermarkets		Under $100		$100-$399		$400-$999		$1,000- or more	
	1989	1988	1989	1988	1989	1988	1989	1988	1989	1988
Total number of survey participants	18	18	9	9	3	3	2	2	4	4
Number of responses to this question	10 100%	10 100%	2 100%	2 100%	2 100%	2 100%	2 100%	2 100%	4 100%	4 100%
Total expenses (in $millions)	69.6	60.8	.1	.1	.8	.5	4.7	3.4	64.0	56.8
Average expenses (in $millions)	7.0	6.1	.04	.05	.4	.3	2.4	1.7	16.0	14.2
Expenses under $350,000	3 30%	3 30%	2 100%	2 100%	1 50%	1 50%	— —	— —	— —	— —
$350,000- under $1 million	1 10%	1 10%	— —	— —	1 50%	1 50%	— —	— —	— —	— —
$1 million- under $5 million	3 30%	3 30%	— —	— —	— —	— —	2 100%	2 100%	1 25%	1 25%
$5 million or more	3 30%	3 30%	— —	— —	— —	— —	— —	— —	3 75%	3 75%

SUPERMARKETS

partments are known as either the vice president of MIS (22%) or the data processing manager (18%). Other common titles are director of MIS, director of information systems services, financial officer and computer operations manager (12% each).

Supermarket MIS heads tend to report directly to a chief financial officer (41%) or to a chief executive officer (29%). They have been with the company an average of nine years, and have headed the MIS department an average of six years.

Supermarket MIS heads are young compared to those in other classes of trade. A substantial number are 36 to 40 years old (34%).

The average pay for a supermarket head of MIS before incentives was $58,555 in 1989. This is the lowest average salary offered by any class of trade. Indeed, half of respondents said they had a salary of $50,000 or less. The average incentive compensation, including bonuses and options, was $23,275. This makes up for the low salary to some degree, but only specialty hardlines stores offer a lower total compensation package.

Use of Scanning: Almost all of supermarket retailers are now making some use of scanning technology. Of the 18 chains that responded to the survey, only one—a company with sales of less than $100 million—did not scan.

Ninety-four percent of supermarket retailers said they are scanning at the point of sale. Seventeen percent mentioned scanning in the warehouse or distribution center, and 50% say they are doing non-POS scanning in the store.

Among supermarkets that now scan, 47% say they intend to eventually be 100% scanned at the point of sale. Ten percent say they intend to be 100% scanned in the warehouse or distribution center, and 17% intend to scan 100% in the store (non-POS).

UPC-A is the sole type of bar code used by the supermarket industry.

By far the most popular type of scanner in supermarkets is the fixed-head, stationary type (100%). The strong preference for this type of scanner is unique among all classes of trade.

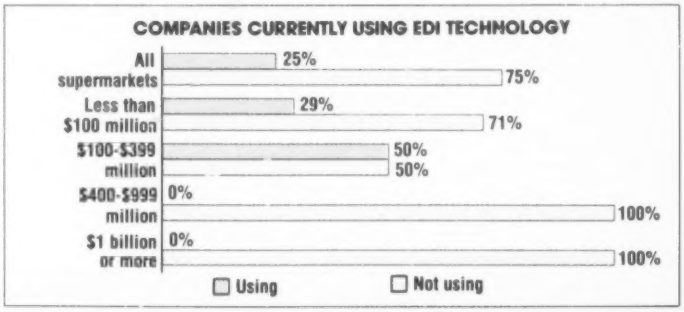
Supermarkets who scan at the point of sale have an average of 10 scanners per store. None indicated having more than 20 scanners.

Use of EDI: Most supermarket companies (75%) are not making any use of EDI. The respondents who mentioned using EDI had sales of $399 million or less.

However, when asked whether they planned to use EDI, 71% of supermarket companies said that they did. Among $1 billion-plus companies, this figure was as high as 100%, while among companies with sales below $100 million, it was as low as 50%.

None of the supermarkets which now use EDI said that they were exchanging data with apparel vendors. On the average, however, they are exchanging data with 8.33% of their non-apparel vendors.

Most supermarkets which use



	PARTICIPANTS BY 1989 SALES VOLUME IN $MILLIONS				
	Supermarkets	Under $100	$100-$399	$400-$999	$1,000 or more
Total number of survey participants	18	9	3	2	4
Number of responses to this question	17 100%	8 100%	3 100%	2 100%	4 100%
Number of full-time equivalent MIS personnel:					
1 to 10	10 59%	8 100%	2 67%	— —	— —
11 to 25	2 12%	— —	1 33%	1 50%	— —
26 to 50	2 12%	— —	— —	1 50%	1 25%
51 to 100	— —	— —	— —	— —	— —
101 to 200	3 17%	— —	— —	— —	3 75%
Over 200	— —	— —	— —	— —	— —
Total full-time equivalent MIS personnel	607	41	28	48	490
Average number of full-time equivalent MIS personnel	36	5	9	24	123

SUPERMARKETS

EDI said they were involved in programs with a total of 1-25 vendors (40%) or were in pilot test (40%). Twenty percent said they were involved in programs with 26-99 vendors.

Twenty percent of supermarket EDI users indicated that the vendors with which they were exchanging data totaled 50% or more of their purchase order dollar volume, while 80% of users said the vendors' total was 49% of that volume or less.

Respondents that use EDI said they are using it for the following transactions: purchase orders (30%), purchase order acknowledgments (10%), vendor invoices (20%), vendor advance shipping notices (10%) and sending point-of-sale data (20%).

Most supermarket retailers using EDI cited shortening the reorder fulfillment cycle as a primary reason (60%). Other reasons cited were reducing inventory levels (20%), improving the accuracy of data (20%) and reducing expenses (40%).

Supermarkets were the only class of trade in which the VICS/ANSI X.12 communications format was not cited as the primary format for sending and receiving electronic transactions. All supermarket EDI users said they were using the Uniform Communication Standard (UCS) format.

Many supermarket retailers are purchasing EDI software provided by a third party network (33%). Many are custom-developing software, either in-house (33%) or externally (17%). In addition, 17% are buying packaged EDI software.

POS/In-Store Systems: Point-of-sale systems in supermarkets tend to be older than in other classes of trade. Thirty-nine percent of supermarket companies said they installed their present POS system 6-10 years ago. Seventeen percent said theirs is more than 10 years old, while only 11% said it is less than two years old.

Electronic cash registers (69%) and programmable cash registers (31%) are the favored types of POS devices in supermarkets. Indeed, the penetration of ECRs is higher in supermarkets than in any other class of trade.

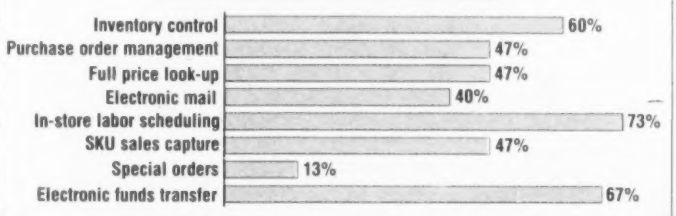
Asked about the likely operating system of their future in-store system, 25% of supermarkets said it would be DOS, 6% mentioned OS/2, and 19% said it would be proprietary.

Forty-seven percent of supermarkets said they plan to migrate their in-store systems to a platform-independent, UNIX-based environment. Sixty-seven percent of these said they plan to do so by 1992. These figures indicate that supermarkets have the strongest commitment toward migrating to UNIX of any class of trade.

Ninety-four percent of supermarket retailers said they use hand-held terminals in-store, and cited the following applications: ordering (94%), physical inventory (31%), price verification (69%), store receiving (50%), price changes (31%) and sales recording (19%).

Emerging Technologies: Up and coming applications which supermarkets plan to implement in the years ahead include signature verification systems (7%), frequent buyer programs (17%), wireless POS devices (15%), interactive promotional video displays (18%), electronic aisle billboards (8%), interactive voice response systems (7%), expert systems (25%) and interactive home shopping services (20%).

APPLICATIONS INTENDED FOR IMPROVEMENT WITHIN TWO YEARS



COMPANIES CURRENTLY SCANNING A BAR CODE

	PARTICIPANTS BY 1989 SALES VOLUME IN $MILLIONS				
	Supermarkets	Under $100	$100-$399	$400-$999	$1,000 or more
Total number of survey participants	18	9	3	2	4
Number of responses to this question	18 100%	9 100%	3 100%	2 100%	4 100%
Currently scanning a bar code	17 94%	8 89%	3 100%	2 100%	4 100%
At the point of sale	17 94%	8 89%	3 100%	2 100%	4 100%
Into the warehouse/ distribution center	3 17%	1 11%	— —	— —	2 50%
In the store (non-POS)	9 50%	5 56%	1 33%	— —	3 75%
Other	— —	— —	— —	— —	— —
Not currently scanning	1 6%	1 11%	— —	— —	— —

CASE STUDY 2: TOYS "R" US

PEOPLE COME BEFORE TECHNOLOGY

Toys "R" Us' reputation as a sophisticated retail user of scanning and electronic data interchange (EDI) is well-known. Much less well-known is the chain's recognition that technology can't accomplish everything—and can sometimes go too far.

Indeed, until a few years ago, Toys had a lot in common with the much-touted technology strategy of Mrs. Fields Cookies. "Through the use of technology, we were making all management decisions centrally," says Dennis Healey, Toys' vp-MIS. "We didn't want to have to worry about hiring store directors who needed to make merchandise decisions."

Sound as that philosophy may seem on paper, in practice it has a tendency to erode morale. "Our store directors were not motivated to care about their stores," Healey says. "Turnover was high. Customer service was not what it should have been."

Thus, Toys is now seeking to return more decision-making powers to store directors. A land line communications network that links headquarters with distribution centers and stores is providing store directors with the data they need to look after day-to-day operations.

"Our goal is to improve store communications even more," Healey says. "We want to be able to transmit images to our store people, not just data. We're vitally interested in emerging technologies which can translate images into digital code."

According to Healey, the $4.8 billion company spends between 0.5% and 1% of its sales volume on MIS. "It's a very conservative amount, compared to other industries, but it meets our needs. We're still basically merchants, and we think like merchants."

Third-party EDI network: Toys is heavily involved in EDI, and uses GE Information Services as its third party EDI network.

About 75% of Toys' invoices, as a percent of sales, are now sent electronically, Healey says. "A lot of the remaining 25% are small vendors who may be hard to get on board. The effort to get 75% was relatively easy—I think the growth will be much slower now."

Because Toys started with EDI about five years ago, before the VICS standards were implemented, it is employing UCS—the supermarket industry's standard—as its main EDI format.

"We support VICS, but we couldn't wait for it," Healey says. "Some of the large grocery vendors we deal with, like Procter & Gamble, were extremely helpful in getting us started with UCS." (P&G is a major supplier of diapers, a Toys "R" Us staple.)

Healey says he still thinks of EDI as an emerging technology. "No one uses it very well, and it hasn't changed business the way it should have. There's plenty of progress yet to be made."

Toys' MIS staff consists of 150 people, the majority of them operational or help desk-oriented.

Toys has always been a scanning company, Healey says. It dabbled 15 years ago with NCR codeabars and pen light scanners at a time when these technologies were considered very costly. "Later, we made a big mistake and went with OCR-A. It worked fine in the lab, but nowhere else. A few years ago, we recognized the mistake and rolled out UPC-A scanning in six months."

The chain is now fully scanned, he says, using laser guns from Symbol Technologies. "They make more sense for our business than fixed-head scanners because we can store them more easily. Most of them are needed only during the busy Christmas season."

Scanning in the warehouse is new to Toys. The company has a single fully-automated warehouse prototype, where scanning is implemented from conveyor systems, and with hand-held terminals as trucks are loaded.

In the U.S., Toys' custom POS and backroom system consists of NCR registers and a variety of CRTs from Unisys and Digital Electronics. All connect to Digital's VAX minicomputers.

"Digital gives us the ability to interface with all sorts of odds and ends of equipment that we've accumulated over the last 15 years," Healey says.

For its relatively newer foreign stores, where starting from scratch was an option, Toys' selected an alternative Healey considers more supportable at a country level: All IBM equipment, all operating on DOS.

"The exception is in the Orient, where IBM doesn't have a good presence. There we have NCR registers and VAXes again."

SPECIALTY: ALL

among companies with sales below $100 million, it was 39%.

Specialty store companies which now use EDI are exchanging data with an average of 3.22% of their apparel vendors. Exchanges of data with non-apparel vendors are higher—an average of 14.43% for retailers overall, and 19.29% for the $1 billion-plus companies.

Most specialty store retailers which use EDI said they were involved in programs with a total of 1-25 vendors (62%). Ten percent of EDI users, all with sales of $1 billion or more, indicated they were involved in EDI programs with 100 vendors or more.

Eight percent of EDI users indicated that the vendors with which they were exchanging data totaled 50% or more of their purchase order dollar volume, while 48% of users said the vendors' total was 4% of that volume or less.

Respondents that use EDI said they are using it for the following transactions: purchase orders (35%), purchase order acknowledgments (16%), vendor invoices (9%), vendor advance shipping notices (7%), sending point-of-sale data (33%) and payments (5%).

Most specialty store retailers using EDI cited shortening the reorder fulfillment cycle as a primary reason (36%). Other reasons cited were reducing inventory levels (27%) and improving the accuracy of data (18%).

Respondents indicated that the VICS/ANSI X.12 communication format has established itself as the leading EDI format in specialty stores (79%).

Most specialty store retailers said they are purchasing EDI software provided by a third party network (43%). A substantial number are using custom-developed or packaged EDI software (29% each).

POS/In-Store Systems: About 8% of specialty store retailers said they installed their present POS system more than 10 years ago. Fifteen percent said it is 6-10 years old, and 61% said theirs is 1-6 years old.

Programmable cash registers (44%) and electronic cash registers (25%) are the favored types of POS devices in specialty stores.

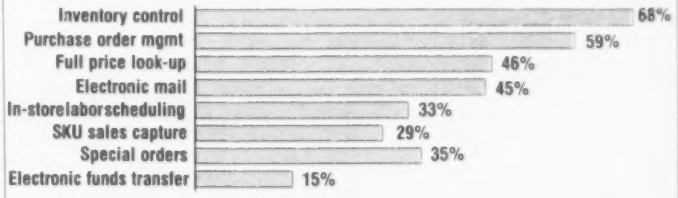
Asked about the likely operating system of their future in-store system, 39% of retailers said it would be DOS, 9% mentioned OS/2, and 23% said it would be proprietary.

Twenty-three percent of specialty store retailers said they plan to migrate their in-store systems to a platform-independent, UNIX-based environment. Eighty-one percent of these said they planned to do so by 1992.

Thirty-five percent of specialty store retailers said they use hand-held terminals in-store, and cited the following applications: ordering (11%), physical inventory (23%), price verification (3%), store receiving (11%), price changes (3%) and sales recording (6%).

Emerging Technologies: Up and coming applications which specialty store retailers plan to implement in the years ahead include signature verification systems (2%), frequent buyer programs (47%), electronic shelf tags (5%), wireless POS devices (16%), interactive promotional video displays (9%), electronic aisle billboards (2%), self-service merchandise dispensing systems (2%), imaging systems (21%), interactive voice response systems (13%) and expert systems (22%).

APPLICATIONS INTENDED FOR IMPROVEMENT WITHIN TWO YEARS



	PARTICIPANTS BY 1989 SALES VOLUME IN $MILLIONS				
	All specialty stores	Under $100	$100-$399	$400-$999	$1,000 or more
Total number of survey participants	85	41	27	9	8
Number of responses to this question	66 100%	32 100%	19 100%	7 100%	8 100%
Currently scanning a bar code	35 53%	14 44%	10 53%	4 57%	7 88%
At the point of sale	18 27%	7 22%	5 26%	2 29%	4 50%
Into the warehouse/ distribution center	19 29%	5 16%	7 37%	1 14%	6 75%
In the store (non-POS)	5 8%	2 6%	2 11%	1 14%	— —
Other	8 12%	6 19%	1 5%	1 14%	— —
Not currently scanning	31 47%	18 56%	9 47%	3 43%	1 12%

SPECIALTY: APPAREL

Of the 85 specialty store companies that responded to the Ernst & Young/*Chain Store Age Executive* IT survey, 22 were specialty apparel stores. Of these, four had 20 stores or less. Eight had 21 to 100 stores, six had 101 to 1,000 stores, and two had more than 1,000 stores. Here's a look at what they reported:

Expenses and Capital Expenditures: The respondents reported MIS expenses totaling $65.3 million in 1989. On a same-respondent basis, their MIS expenses rose 11.75% over 1988. As a percent of sales, however, expenses were off slightly—0.96% in 1989 against 0.97% in 1988, for a decline of 1.03% on a same-respondent basis.

Most of the respondents (57%) said their MIS expenses were 0.25% to 0.99% of their sales revenue. Eleven percent said they were less than 0.25%, and 21% spent 1%-2%. Eleven percent said MIS expenses accounted for more than 2% of their sales.

POS devices and controllers accounted for the bulk of capital expenditures for specialty stores (60%)—one of the highest shares for the category posted by any class of trade. Other costs were mainframe and peripherals (26%), backroom and administrative equipment (7%) and software (7%).

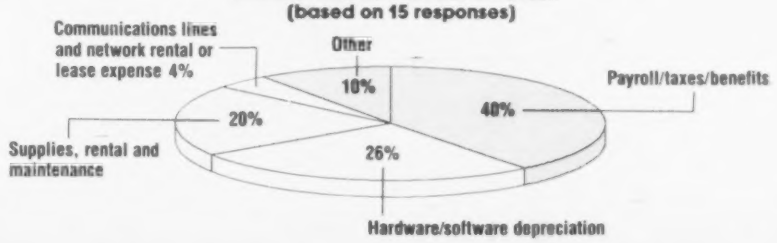
Companies spent 44% of their systems development payroll costs on new development in 1989, as opposed to on-going development. On a same-respondent basis, this figure was up 10% from 1988.

Organization: The average number of full-time employees in a specialty apparel MIS department was 39. However, 50% of respondents had MIS departments of 10 employees or less. The largest departments were in $1 billion-plus companies, which had an average of 147 MIS employees.

The average specialty apparel MIS department is split 17% management, 83% staff. Companies with sales of less than $399 million are slightly top-heavier with management (24%). Within the department, 43% of personnel concentrate on systems development, 9% on technical support, 39% on computer operations and 9% on administration.

Profile of the Director: Most heads of specialty apparel MIS departments are known as the vice president of MIS (52%). In

BREAKDOWN OF 1989 MIS EXPENSES
(based on 15 responses)



ANALYSIS OF MIS OPERATING EXPENSES

	PARTICIPANTS BY 1989 SALES VOLUME IN $ MILLIONS									
	Specialty apparel		Under $100		$100-$399		$400-$999		$1,000- or more	
	1989	1988	1989	1988	1989	1988	1989	1988	1989	1988
Total number of survey participants	22	22	10	10	7	7	2	2	3	3
Number of responses to this question	19 100%	19 100%	7 100%	7 100%	7 100%	7 100%	2 100%	2 100%	3 100%	3 100%
Total expenses (in $millions)	65.3	58.4	1.7	1.7	12.2	11.6	13.2	11.3	38.2	33.8
Average expenses (in $millions)	3.4	3.1	.2	.2	1.7	1.7	6.6	5.7	12.7	11.3
Expenses under $350,000	5 26%	5 26%	5 71%	5 71%	— —	— —	— —	— —	— —	— —
$350,000-under $1 million	5 26%	5 26%	2 29%	2 29%	3 43%	3 43%	— —	— —	— —	— —
$1 million-under $5 million	5 26%	5 26%	— —	— —	4 57%	4 57%	1 50%	1 50%	— —	— —
$5 million or more	4 22%	4 22%	— —	— —	— —	— —	1 50%	1 50%	3 100%	3 100%

SPECIALTY: APPAREL

no other class of trade is this title so common—indeed, among specialty hardlines chains, the most common title is director of MIS (40%).

Specialty apparel MIS heads tend to report directly to a chief financial officer (52%) or to a chief executive officer (33%). They have been with the company an average of nine years, and have headed the MIS department an average of seven years.

Most specialty apparel MIS heads are 41 to 49 years old (50%). However, 23% are less than 30 years old, and 18% are 50 or older.

The average pay for a specialty apparel head of MIS before incentives was $69,850 in 1989, one of the highest offered by any class of trade. However, the average incentive compensation, including bonuses and options, was $13,256, by far the lowest. Twenty-five percent said they make $90,000 or more, while 25% said their salary is under $50,000.

Use of Scanning: Eighty-two percent of specialty apparel chains are now making some use of scanning technology. Among $1 billion-plus companies, this figure is as high as 100%, but even among companies with sales of less than $100 million, 75% are scanning.

Of all classes of trade, only mass merchants and supermarkets are making more use of scanning. Specialty hardlines chains are making much less use (36%).

Forty-one percent of specialty apparel retailers say they are scanning at the point of sale, 53% mention scanning in the warehouse or distribution center, and 12% say they are doing non-POS scanning in the store.

Among specialty apparel companies that now scan, 78% say they intend to eventually be 100% scanned at the point of sale—the highest percentage of all classes of trade. Twenty-five percent say they intend to be 100% scanned in the warehouse or distribution center, and 25% intend to scan 100% in the store (non-POS).

UPC-A is the most commonly-used type of bar code (56%) among specialty apparel stores.

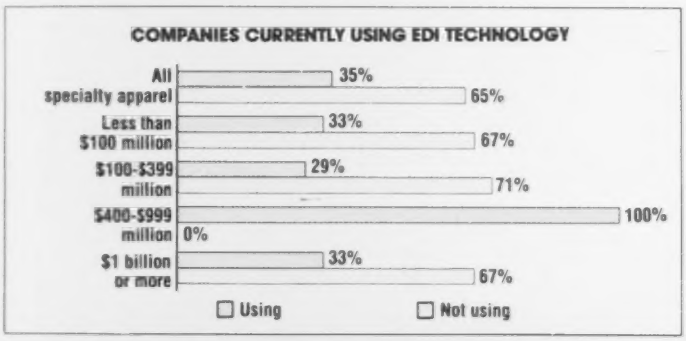
The most popular type of scanner is the hand-held variety (88%). No one mentioned making use of the fixed-head stationary type, and only 13% said they were using contact wands.

Respondents who scan at the point of sale have an average of four scanners per store. Nine percent indicated having more than 20 scanners.

Among respondents who are not planning to scan, 50% said it was because scanning was inappropriate for their type of merchandise. Seventy-five percent cited the high cost of scanning, and 25% cited the insufficient quantity of vendor-marked goods.

Use of EDI: Thirty-five percent of specialty apparel companies are now using EDI. Size of company appears to have no bearing.

When asked whether they planned to use EDI, 69% of companies said that they did. Among $1 billion-plus companies, this figure was as high as 100%, while



	PARTICIPANTS BY 1989 SALES VOLUME IN $MILLIONS				
	Specialty apparel	Under $100	$100-$399	$400-$999	$1,000 or more
Total number of survey participants	22	10	7	2	3
Number of responses to this question	22 100%	10 100%	7 100%	2 100%	3 100%
Number of full-time equivalent MIS personnel:					
1 to 10	11 50%	10 100%	1 14%	— —	— —
11 to 25	3 14%	— —	3 43%	— —	— —
26 to 50	3 14%	— —	3 43%	— —	— —
51 to 100	1 4%	— —	— —	1 50%	— —
101 to 200	4 18%	— —	— —	1 50%	3 100%
Over 200	— —	— —	— —	— —	— —
Total full-time equivalent MIS personnel	864	54	170	199	441
Average number of full-time equivalent MIS personnel	39	5	24	100	147

SPECIALTY: APPAREL

among companies with sales below $100 million, it was as low as 50%.

Specialty apparel chains which now use EDI are exchanging data with an average of 4% of their apparel vendors and 5.63% of their non-apparel vendors. Seventeen percent are exchanging data with 6%-25% of their apparel vendors, while 13% are exchanging data with 26%-50% of their non-apparel vendors.

Most specialty apparel chains which use EDI said they were involved in programs with a total of 1-25 vendors (67%). Thirty-three percent of EDI users indicated they were in pilot test only.

Thirty percent of EDI users indicated that the vendors with which they were exchanging data totaled 10%-49% of their purchase order dollar volume, while 70% of users said the vendors' total was 9% of that volume or less.

Specialty apparel respondents that use EDI said they are using it for the following transactions: purchase orders (29%), purchase order acknowledgements (14%), vendor invoices (7%), vendor advance shipping notices (7%), sending point-of-sale data (29%) and payments (7%).

Most specialty apparel retailers using EDI cited shortening the reorder fulfillment cycle as a primary reason (38%). Others suggested EDI would help them gain a competitive edge (25%).

Respondents indicated that the VICS/ANSI X.12 communication format has established itself as the leading EDI format in specialty apparel stores (88%).

Specialty apparel EDI users are purchasing packaged EDI software (25%), or software provided by a third party network (33%). A substantial number are developing software in-house (33%).

POS/In-Store Systems: About 9% of specialty apparel retailers said they installed their present POS system more than 10 years ago. Twenty-seven percent said it is 6-10 years old, and 41% said theirs is 2-6 years old. Twenty-three percent said their system is less than two years old.

Programmable cash registers (56%) and electronic cash registers (25%) are the favored types of POS devices among specialty apparel chains. Micro PCs with cash drawers (13%) also have a strong following.

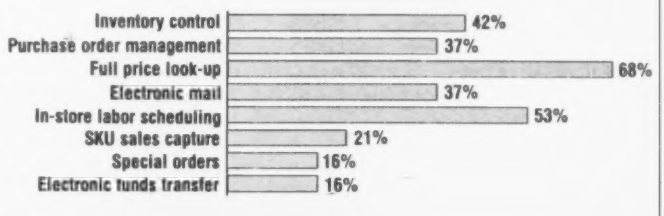
Asked about the likely operating system of their future in-store system, 41% of specialty apparel chains said it would be DOS, 29% mentioned OS/2, and 24% said it would be proprietary.

Only 10% percent of specialty apparel retailers said they plan to migrate their in-store systems to a platform-independent, UNIX-based environment by 1992. This represents the lowest level of support for UNIX of any class of trade.

Thirty-three percent of respondents said they use handheld terminals in-store, and cited the following applications: physical inventory (17%), store receiving (11%) and sales recording (6%).

Emerging Technologies: Up and coming applications which specialty apparel retailers plan to implement in the years ahead include frequent buyer programs (56%), wireless POS devices (24%), interactive promotional video displays (5%), electronic aisle billboards (5%), interactive voice response systems (22%) and expert systems (26%).

APPLICATIONS INTENDED FOR IMPROVEMENT WITHIN TWO YEARS



	PARTICIPANTS BY 1989 SALES VOLUME IN $MILLIONS				
	Specialty apparel	Under $100	$100-$399	$400-$999	$1,000 or more
Total number of survey participants	22	10	7	2	3
Number of responses to this question	17 100%	8 100%	5 100%	1 100%	3 100%
Currently scanning a bar code	14 82%	6 75%	5 100%	— —	3 100%
At the point of sale	7 41%	4 50%	1 20%	— —	2 67%
Into the warehouse/ distribution center	9 53%	2 25%	4 80%	— —	3 100%
In the store (non-POS)	2 12%	1 13%	1 20%	— —	— —
Other	2 12%	2 25%	— —	— —	— —
Not currently scanning	3 18%	2 25%	— —	1 100%	— —